



Water and Waste Department • Service des eaux et des déchets

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December 7, 2016

Melanie Betsill  
Office of Drinking Water  
Manitoba Sustainable Development  
1007 Century Street  
Winnipeg, Manitoba R3H 0W4

Our File: 040-18-18-55-00

Dear Ms. Betsill:

**RE: NOVEMBER 2016 WATER QUALITY COMPLIANCE  
SUBMISSION FOR THE CITY OF WINNIPEG WATER SUPPLY SYSTEM**

Please find attached on-line and grab turbidity summary reports, on-line and grab chlorine summary reports and the UV summary report for the Water Treatment Plant for November 2016. There are no corrective action reports to be submitted for November 2016.

The November on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. Please note that the on-line turbidity report shows a maximum turbidity of 0.31 NTU for filter #7 on November 23<sup>rd</sup>; the elevated turbidity lasted for a short period of time and did not exceed the normal operating turbidity for more than 12 consecutive hours. The turbidity results for the effluent from the filters met the licence requirements.

The November on-line and grab sampling chlorine reports include results obtained for the Deacon Booster Pumping Station at the Water Treatment Plant. The free chlorine results at the Water Treatment Plant met the licence requirements.

The November UV summary report includes results obtained for the six UV reactors at the Water Treatment Plant. The UV disinfection results met the licence requirements.

Please let me know of any concerns or questions respecting this submission. I may be reached by telephone at 204-986-8359 or by e-mail at [rgrosselle@winnipeg.ca](mailto:rgrosselle@winnipeg.ca).

Yours sincerely,

*Original signed by:*

R. Grosselle  
Manager of Environmental Standards  
Attachments

cc: (e-mail)

Dr. L. Richards, Winnipeg Regional Health Authority  
Dr. H. Chang, Winnipeg Regional Health Authority  
Dr. S. Roberecki, Manitoba Health, Healthy Living and Seniors  
M. L. Geer, CPA, CA  
G. Patton, P.Eng.  
T. Shanks, P.Eng.  
M. Szmon, P.Eng.  
C. Diduck

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**CITY OF WINNIPEG**  
 WATER AND WASTE DEPARTMENT  
 WATER SERVICES

Water System Code: 252.00  
 Licence Number: PWS-09-412-01

**WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT**

November 2016 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/11/2016	1.06	0.02	0.05	0.07	0.15	0.00	0.00	0.04	0.09	0.07	0.11	0.02	0.03	0.02	0.08	0.00	0.01
2/11/2016	1.11	0.02	0.05	0.07	0.11	0.00	0.03	0.03	0.07	0.05	0.11	0.02	0.07	0.03	0.05	0.01	0.01
3/11/2016	1.13	0.02	0.04	0.10	0.14	0.00	0.03	0.02	0.04	0.07	0.09	0.01	0.07	0.02	0.07	0.00	0.01
4/11/2016	1.14	0.02	0.05	0.05	0.15	0.00	0.00	0.04	0.08	0.07	0.11	0.02	0.04	0.02	0.03	0.00	0.03
5/11/2016	1.17	0.02	0.03	0.09	0.11	0.00	0.04	0.03	0.09	0.06	0.12	0.02	0.09	0.03	0.10	0.01	0.01
6/11/2016	1.29	0.04	0.07	0.09	0.15	0.00	0.05	0.04	0.09	0.09	0.11	0.02	0.04	0.03	0.10	0.01	0.08
7/11/2016	1.21	0.02	0.07	0.05	0.11	0.00	0.02	0.04	0.08	0.04	0.12	0.05	0.13	0.02	0.05	0.00	0.03
8/11/2016	1.14	0.01	0.02	0.05	0.06	0.01	0.07	0.01	0.06	0.02	0.07	0.03	0.12	0.03	0.10	0.01	0.01
9/11/2016	1.09	0.02	0.06	0.04	0.11	0.00	0.07	0.01	0.02	0.02	0.05	0.04	0.06	0.02	0.06	0.00	0.01
10/11/2016	1.07	0.01	0.06	0.04	0.11	0.00	0.02	0.02	0.05	0.02	0.06	0.05	0.12	0.01	0.03	0.01	0.01
11/11/2016	1.05	0.01	0.03	0.06	0.07	0.01	0.07	0.01	0.06	0.02	0.03	0.03	0.12	0.03	0.09	0.00	0.03
12/11/2016	1.05	0.02	0.06	0.04	0.11	0.00	0.07	0.01	0.02	0.03	0.07	0.05	0.13	0.02	0.21	0.01	0.06
13/11/2016	1.04	0.02	0.07	0.04	0.12	0.00	0.05	0.02	0.06	0.02	0.06	0.04	0.11	0.01	0.03	0.01	0.01
14/11/2016	1.02	0.02	0.06	0.06	0.11	0.00	0.06	0.01	0.06	0.02	0.05	0.03	0.11	0.03	0.09	0.01	0.06
15/11/2016	1.02	0.02	0.05	0.04	0.11	0.00	0.06	0.01	0.02	0.03	0.05	0.04	0.06	0.02	0.08	0.00	0.03
16/11/2016	0.99	0.01	0.05	0.03	0.10	0.00	0.04	0.01	0.06	0.02	0.05	0.03	0.11	0.01	0.03	0.01	0.01
17/11/2016	1.01	0.01	0.03	0.06	0.08	0.00	0.06	0.01	0.05	0.02	0.04	0.03	0.11	0.03	0.08	0.00	0.04
18/11/2016	1.00	0.01	0.05	0.04	0.10	0.00	0.00	0.02	0.02	0.03	0.06	0.04	0.09	0.02	0.07	0.00	0.03
19/11/2016	0.96	0.01	0.05	0.04	0.06	0.00	0.05	0.01	0.06	0.02	0.07	0.03	0.11	0.02	0.04	0.01	0.02
20/11/2016	0.95	0.02	0.05	0.05	0.11	0.00	0.00	0.02	0.06	0.03	0.05	0.04	0.10	0.02	0.08	0.00	0.03
21/11/2016	0.94	0.02	0.06	0.05	0.11	OL	OL	0.02	0.02	0.03	0.07	0.04	0.07	0.02	0.08	0.01	0.02
22/11/2016	0.95	0.02	0.06	0.05	0.11	OL	OL	0.01	0.05	0.02	0.05	0.02	0.09	0.01	0.04	0.01	0.01
23/11/2016	0.95	0.01	0.03	0.05	0.08	OL	OL	0.02	0.05	0.02	0.09	0.04	0.24	0.03	0.31	0.01	0.03
24/11/2016	0.91	0.03	0.06	0.06	0.11	OL	OL	0.02	0.06	0.03	0.05	0.03	0.10	0.03	0.09	0.01	0.03
25/11/2016	0.90	0.03	0.08	0.06	0.11	OL	OL	0.02	0.02	0.02	0.07	0.04	0.10	0.02	0.08	0.01	0.03
26/11/2016	0.91	0.03	0.08	0.06	0.13	OL	OL	0.02	0.06	0.03	0.08	0.04	0.10	0.02	0.04	0.01	0.01
27/11/2016	0.92	0.03	0.05	0.06	0.10	OL	OL	0.02	0.08	0.03	0.08	0.04	0.12	0.04	0.10	0.01	0.04
28/11/2016	0.92	0.04	0.09	0.04	0.09	OL	OL	0.02	0.08	0.04	0.07	0.04	0.06	0.03	0.10	0.01	0.03
29/11/2016	0.92	0.03	0.08	0.04	0.10	OL	OL	0.02	0.04	0.03	0.09	0.05	0.12	0.04	0.11	0.01	0.01
30/11/2016	0.93	0.03	0.11	0.03	0.06	OL	OL	0.02	0.09	0.03	0.09	0.04	0.13	0.04	0.07	0.01	0.05

Total Number of Measurements Taken, A:	14158	11349	5516	11021	14986	14692	13237	14346
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	14158	11349	5516	11021	14986	14692	13236	14346
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	99.992%	100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2016\11-November

Submitted By (Print): D. Merredew

Signature: Original Signed by D. Merredew



CITY OF WINNIPEG  
WATER AND WASTE DEPARTMENT  
ENVIRONMENTAL STANDARDS DIVISION

**WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT**

Water System Code: 252.00		Turbidity (NTU)																	
Licence No. PWS-09-412-01																			
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8		
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	
01-Nov-2016	1.20	1.26	0.09	0.03	0.10	0.11	0.07	<0.02	0.08	0.02	0.11	0.07	0.08	<0.02	0.08	0.02	OL	OL	
02-Nov-2016	0.88	1.08	0.09	<0.02	0.08	0.10	0.09	<0.02	0.08	0.03	0.10	0.10	0.09	0.02	0.10	0.02	0.07	<0.02	
03-Nov-2016	1.00	1.07	0.07	<0.02	0.09	0.11	OL	OL	0.08	0.02	0.07	0.07	0.07	<0.02	0.10	0.03	0.08	<0.02	
04-Nov-2016	1.06	1.09	OL	OL	OL	OL	0.08	<0.02	0.08	0.03	0.10	0.08	0.09	<0.02	0.07	<0.02	0.07	<0.02	
05-Nov-2016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
06-Nov-2016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
07-Nov-2016	1.03	1.13	0.18	0.03	OL	OL	0.13	<0.02	0.10	0.04	0.13	0.10	0.11	0.05	0.09	0.03	0.09	<0.02	
08-Nov-2016	0.91	1.09	0.14	<0.02	0.10	0.05	0.14	0.02	0.13	<0.02	0.13	0.02	OL	OL	0.11	0.03	0.10	<0.02	
09-Nov-2016	0.95	1.04	0.09	<0.02	0.10	0.05	0.09	<0.02	0.11	<0.02	0.09	<0.02	0.10	0.03	0.14	0.03	0.13	0.02	
10-Nov-2016	1.08	1.04	OL	OL	0.12	0.05	0.11	<0.02	0.13	<0.02	0.10	0.03	0.13	0.06	0.13	<0.02	0.11	<0.02	
11-Nov-2016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
12-Nov-2016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
13-Nov-2016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
14-Nov-2016	0.87	0.99	0.08	<0.02	0.09	0.06	0.11	<0.02	OL	OL	0.09	<0.02	0.08	0.03	0.09	0.02	0.10	<0.02	
15-Nov-2016	0.97	0.97	0.10	0.02	0.09	0.07	0.08	<0.02	0.08	<0.02	0.09	0.02	0.09	0.03	0.14	0.06	0.07	<0.02	
16-Nov-2016	0.82	0.98	0.10	<0.02	0.10	0.05	0.11	<0.02	0.11	<0.02	0.13	0.04	0.10	0.03	0.09	<0.02	0.09	<0.02	
17-Nov-2016	0.76	0.94	0.09	<0.02	0.12	0.07	0.12	<0.02	0.09	<0.02	0.09	0.02	0.16	0.03	0.11	0.03	0.10	<0.02	
18-Nov-2016	0.91	0.98	0.10	<0.02	0.11	0.08	0.10	<0.02	0.11	<0.02	0.12	0.03	0.14	0.03	0.08	<0.02	0.07	<0.02	
19-Nov-2016	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
20-Nov-2016	NS	NS	NS	NS	NS	NS	0.09	<0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
21-Nov-2016	0.85	0.91	0.13	0.03	OL	OL	OL	OL	0.11	<0.02	0.11	0.04	0.10	0.03	0.08	<0.02	0.08	<0.02	
22-Nov-2016	0.76	0.96	0.08	<0.02	0.11	0.06	OL	OL	0.10	<0.02	0.15	0.03	0.11	0.04	0.08	<0.02	0.07	<0.02	
23-Nov-2016	0.83	0.91	0.08	<0.02	0.08	0.06	OL	OL	0.14	<0.02	0.08	<0.02	0.09	0.02	0.11	0.02	0.14	0.02	
24-Nov-2016	0.83	0.89	0.11	0.02	0.12	0.08	OL	OL	0.10	<0.02	0.10	0.02	0.11	0.03	0.12	0.03	0.08	<0.02	
25-Nov-2016	0.86	0.88	0.12	0.02	0.10	0.06	OL	OL	0.09	<0.02	0.11	0.03	0.10	0.03	0.10	<0.02	0.11	<0.02	
26-Nov-2016	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
27-Nov-2016	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
28-Nov-2016	0.82	0.91	0.11	0.03	0.14	0.07	OL	OL	0.11	<0.02	0.10	0.03	0.10	0.03	0.15	0.07	0.08	<0.02	
29-Nov-2016	0.84	0.90	0.13	0.02	0.10	0.03	OL	OL	0.11	<0.02	0.14	0.04	0.15	0.05	0.14	0.02	0.12	<0.02	
30-Nov-2016	1.05	0.91	0.10	0.02	0.10	0.05	OL	OL	0.12	0.02	0.11	0.02	NS	NS	0.13	0.03	0.12	<0.02	
<b>Total number of measurements taken, A:</b>			19		18		13		20		21		19		21		20		
<b>Turbidity Standard for Monitoring Location (NTU):</b>			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30		
<b>Number of measurements meeting standard, B:</b>			19		18		13		20		21		19		21		20		
<b>Compliance with Turbidity Standard, C= B/A X 100%:</b>			100%		100%		100%		100%		100%		100%		100%		100%		

NS: No Sample NA: Not Analyzed OL: Off-Line

**Comments:**

Plant shut down due to electrical problems at Deacon Booster Station. Filter 6 was not sampled before the shutdown. Filter 3 was offline for maintenance from November 23rd to November 30th.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Dec-16



**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**  
**Deacon Booster Pumping Station**

Water System Code: **252.00**  
Licence Number: **PWS-09-412-01**  
Report Created: **02 December 2016**

Report Period: November 2016

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/11/2016	1.09	1.04	0.98	0.95
02/11/2016	1.09	1.03	1.06	0.95
03/11/2016	1.11	1.06	1.13	1.08
04/11/2016	1.14	1.08	1.15	1.12
05/11/2016	1.08	1.02	1.08	1.02
06/11/2016	1.03	0.99	1.03	0.99
07/11/2016	0.99	0.94	0.97	0.94
08/11/2016	1.00	0.95	1.02	0.96
09/11/2016	1.10	0.95	1.13	0.98
10/11/2016	1.03	0.98	1.05	0.99
11/11/2016	1.06	1.01	1.03	1.00
12/11/2016	1.02	0.97	1.01	0.98
13/11/2016	1.02	0.97	1.04	1.01
14/11/2016	1.03	0.98	1.07	1.02
15/11/2016	1.02	0.89	1.03	0.92
16/11/2016	1.07	1.00	1.05	0.97
17/11/2016	1.07	1.03	1.02	1.00
18/11/2016	1.06	1.00	1.00	0.96
19/11/2016	1.11	1.02	1.05	0.97
20/11/2016	1.14	1.11	1.08	1.05
21/11/2016	1.18	1.06	1.09	1.04
22/11/2016	1.04	0.68	1.01	0.86
23/11/2016	1.01	0.93	1.02	0.90
24/11/2016	0.96	0.89	0.99	0.93
25/11/2016	1.01	0.93	0.98	0.88
26/11/2016	0.99	0.90	1.04	0.98
27/11/2016	1.00	0.93	1.03	0.99
28/11/2016	0.97	0.82	0.99	0.80
29/11/2016	0.94	0.89	0.96	0.91
30/11/2016	1.01	0.85	0.99	0.84

Total Number of Measurements, A:	20912	20902
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20912	20902
COMPLIANCE, C = B/A X 100%:	100	100

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2016\11-November

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew



CITY OF WINNIPEG  
 WATER AND WASTE DEPARTMENT  
 ENVIRONMENTAL STANDARDS DIVISION

**WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT**

Water System Code: 252.00 Licence No. PWS-09-412-01	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
Date	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Nov-2016	1.11	1.12	1.28	0.97	0.96	1.19
02-Nov-2016	1.11	1.15	1.25	1.11	1.15	1.30
03-Nov-2016	1.07	1.14	1.25	1.09	1.13	1.27
04-Nov-2016	1.14	1.18	1.31	1.15	1.14	1.28
05-Nov-2016	NS	NS	NS	NS	NS	NS
06-Nov-2016	NS	NS	NS	NS	NS	NS
07-Nov-2016	0.99	1.01	1.20	0.96	1.06	1.16
08-Nov-2016	1.02	1.10	1.24	1.02	1.09	1.20
09-Nov-2016	1.39	1.36	1.67	1.43	1.37	1.67
10-Nov-2016	1.04	1.04	1.22	1.07	1.09	1.23
11-Nov-2016	NS	NS	NS	NS	NS	NS
12-Nov-2016	NS	NS	NS	NS	NS	NS
13-Nov-2016	NS	NS	NS	NS	NS	NS
14-Nov-2016	1.05	1.00	1.27	1.08	1.08	1.25
15-Nov-2016	1.08	1.11	1.25	1.05	1.01	1.19
16-Nov-2016	1.05	1.09	1.27	1.05	1.05	1.26
17-Nov-2016	1.08	1.10	1.25	1.03	1.05	1.21
18-Nov-2016	1.08	1.10	1.30	1.03	1.08	1.24
19-Nov-2016	NS	NS	NS	NS	NS	NS
20-Nov-2016	NS	NS	NS	NS	NS	NS
21-Nov-2016	1.11	1.16	1.28	1.06	1.10	1.25
22-Nov-2016	1.06	1.07	1.23	1.04	1.01	1.22
23-Nov-2016	1.00	1.04	1.24	1.04	1.04	1.18
24-Nov-2016	0.95	0.98	1.12	1.00	0.97	1.14
25-Nov-2016	0.99	0.95	1.15	0.96	1.01	1.18
26-Nov-2016	NS	NS	NS	NS	NS	NS
27-Nov-2016	NS	NS	NS	NS	NS	NS
28-Nov-2016	0.96	1.03	1.11	0.99	1.01	1.15
29-Nov-2016	0.95	0.99	1.12	0.96	1.00	1.11
30-Nov-2016	0.95	1.01	1.14	0.96	1.03	1.15
<b>Total number of measurements taken, A:</b>		21			21	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		21			21	
<b>Compliance with Chlorine Standard, C= B/A X 100%:</b>		100%			100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Dec-16



**CITY OF WINNIPEG**  
 WATER AND WASTE DEPARTMENT  
 WATER SERVICES

Water System Code: **252.00**  
 Licence Number: **PWS-09-412-01**

**WATER TREATMENT PLANT UV REPORT**

Report Period: **November 2016**

Report Created: **Thursday, December 01, 2016**

Date	Transmittance %	UVR-D100A Water Volume [ML]				UVR-D200A Water Volume [ML]				UVR-D300A Water Volume [ML]				UVR-D400A Water Volume [ML]				UVR-D500A Water Volume [ML]				UVR-D600A Water Volume [ML]				Total Water Volume [ML]				% Volume Treated To Dose
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
01/11/2016	94.37	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.83	39.83	0.00	0.00	63.17	63.17	0.00	0.00	188.00	188.00	100.00
02/11/2016	94.35	0.00	0.00	0.00	0.00	0.00	0.00	67.10	67.10	0.00	0.00	46.62	46.62	0.00	0.00	0.00	0.00	0.00	0.00	55.84	55.84	0.00	0.00	16.15	16.15	0.00	0.00	185.71	185.71	100.00
03/11/2016	94.30	0.00	0.00	0.00	0.00	0.00	0.00	61.33	61.33	0.00	0.00	62.23	62.23	0.00	0.00	0.00	0.00	0.00	0.00	61.47	61.47	0.00	0.00	0.00	0.00	0.00	0.00	185.03	185.03	100.00
04/11/2016	94.15	0.00	0.00	0.00	0.00	0.00	0.00	59.36	59.36	0.00	0.00	61.52	61.52	0.00	0.00	0.00	0.00	0.00	0.00	60.40	60.40	0.00	0.00	0.00	0.00	0.00	0.00	181.29	181.29	100.00
05/11/2016	94.09	0.00	0.00	0.00	0.00	0.00	0.00	70.15	70.15	0.00	0.00	42.04	42.04	0.00	0.00	53.10	53.10	0.00	0.00	12.77	12.77	0.00	0.00	0.00	0.00	0.00	0.00	178.05	178.05	100.00
06/11/2016	93.97	0.00	0.00	0.00	0.00	0.00	0.00	74.18	74.18	0.00	0.00	37.17	37.17	0.00	0.00	68.48	68.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	179.84	179.84	100.00
07/11/2016	93.99	0.00	0.00	0.00	0.00	0.00	0.00	66.71	66.71	0.00	0.00	9.87	9.87	0.00	0.00	61.55	61.55	0.00	0.00	0.00	0.00	0.00	0.00	41.87	41.87	0.00	0.00	180.00	180.00	100.00
08/11/2016	94.01	0.00	0.00	0.00	0.00	0.00	0.00	63.50	63.50	0.00	0.00	0.00	0.00	0.00	0.00	59.02	59.02	0.00	0.00	0.00	0.00	0.00	0.00	56.45	56.45	0.00	0.00	178.97	178.97	100.00
09/11/2016	93.70	0.00	0.00	0.00	0.00	0.00	0.00	63.80	63.80	0.00	0.00	0.00	0.00	0.00	0.00	57.87	57.87	0.00	0.00	0.00	0.00	0.00	0.00	56.50	56.50	0.00	0.00	178.17	178.17	100.00
10/11/2016	93.94	0.00	0.00	0.00	0.00	0.00	0.00	65.86	65.86	0.00	0.00	0.00	0.00	0.00	0.00	61.96	61.96	0.00	0.00	0.00	0.00	0.00	0.00	58.17	58.17	0.00	0.00	185.99	185.99	100.00
11/11/2016	93.91	0.00	0.00	0.00	0.00	0.00	0.00	63.74	63.74	0.00	0.00	0.00	0.00	0.00	0.00	60.25	60.25	0.00	0.00	0.00	0.00	0.00	0.00	57.15	57.15	0.00	0.00	181.14	181.14	100.00
12/11/2016	93.92	0.00	0.00	0.00	0.00	0.00	0.00	62.76	62.76	0.00	0.00	0.00	0.00	0.00	0.00	60.11	60.11	0.00	0.00	0.00	0.00	0.00	0.00	57.15	57.15	0.00	0.00	180.02	180.02	100.00
13/11/2016	94.06	0.00	0.00	0.00	0.00	0.00	0.00	62.82	62.82	0.00	0.00	0.00	0.00	0.00	0.00	59.92	59.92	0.00	0.00	0.00	0.00	0.00	0.00	57.26	57.26	0.00	0.00	180.00	180.00	100.00
14/11/2016	93.85	0.00	0.00	0.00	0.00	0.00	0.00	62.59	62.59	0.00	0.00	0.00	0.00	0.00	0.00	59.50	59.50	0.00	0.00	0.00	0.00	0.00	0.00	56.94	56.94	0.00	0.00	179.03	179.03	100.00
15/11/2016	94.05	0.00	0.00	0.00	0.00	0.00	0.00	61.58	61.58	0.00	0.00	0.00	0.00	0.00	0.00	58.14	58.14	0.00	0.00	0.00	0.00	0.00	0.00	56.28	56.28	0.00	0.00	176.00	176.00	100.00
16/11/2016	94.03	0.00	0.00	0.00	0.00	0.00	0.00	68.93	68.93	0.00	0.00	0.00	0.00	0.00	0.00	52.40	52.40	0.00	0.00	0.00	0.00	0.00	0.00	55.03	55.03	0.00	0.00	176.36	176.36	100.00
17/11/2016	94.04	0.00	0.00	0.00	0.00	0.00	0.00	74.24	74.24	0.00	0.00	0.00	0.00	0.00	0.00	48.47	48.47	0.00	0.00	0.00	0.00	0.00	0.00	54.70	54.70	0.00	0.00	177.41	177.41	100.00
18/11/2016	94.08	0.00	0.00	0.00	0.00	0.00	0.00	73.96	73.96	0.00	0.00	0.00	0.00	0.00	0.00	48.03	48.03	0.00	0.00	0.00	0.00	0.00	0.00	53.98	53.98	0.00	0.00	175.97	175.97	100.00
19/11/2016	94.03	0.00	0.00	0.00	0.00	0.00	0.00	74.92	74.92	0.00	0.00	0.00	0.00	0.00	0.00	47.34	47.34	0.00	0.00	0.00	0.00	0.00	0.00	52.34	52.34	0.00	0.00	174.59	174.59	100.00
20/11/2016	93.93	0.00	0.00	0.00	0.00	0.00	0.00	74.86	74.86	0.00	0.00	0.00	0.00	0.00	0.00	47.17	47.17	0.00	0.00	0.00	0.00	0.00	0.00	51.99	51.99	0.00	0.00	174.02	174.02	100.00
21/11/2016	93.96	0.00	0.00	0.00	0.00	0.00	0.00	74.80	74.80	0.00	0.00	0.00	0.00	0.00	0.00	47.11	47.11	0.00	0.00	0.00	0.00	0.00	0.00	52.08	52.08	0.00	0.00	173.99	173.99	100.00
22/11/2016	93.75	0.00	0.00	0.00	0.00	0.02	0.02	67.44	67.48	0.00	0.00	0.00	0.00	0.02	0.02	42.19	42.22	0.00	0.00	0.00	0.00	0.01	0.01	46.97	46.99	0.05	0.05	156.59	156.69	99.94
23/11/2016	93.58	0.00	0.00	0.00	0.00	0.00	0.00	72.10	72.10	0.00	0.00	0.00	0.00	0.00	0.00	40.67	40.67	0.00	0.00	0.00	0.00	0.00	0.00	67.20	67.20	0.00	0.00	179.98	179.98	100.00
24/11/2016	93.78	0.00	0.00	0.00	0.00	0.00	0.00	72.04	72.04	0.00	0.00	0.00	0.00	0.00	0.00	41.23	41.23	0.00	0.00	0.00	0.00	0.00	0.00	66.75	66.75	0.00	0.00	180.02	180.02	100.00
25/11/2016	93.60	0.00	0.06	15.78	15.84	0.00	0.00	53.24	53.25	0.01	0.03	0.00	0.05	0.00	0.00	47.24	47.24	0.00	0.00	0.00	0.00	0.00	0.00	61.34	61.34	0.02	0.10	177.60	177.72	99.93
26/11/2016	93.55	0.00	0.00	0.00	0.00	0.00	0.00	61.94	61.94	0.00	0.00	0.00	0.00	0.00	0.00	58.76	58.76	0.00	0.00	0.00	0.00	0.00	0.00	56.27	56.27	0.00	0.00	176.97	176.97	100.00
27/11/2016	93.42	0.00	0.00	0.00	0.00	0.00	0.00	61.93	61.93	0.00	0.00	0.00	0.00	0.00	0.00	58.68	58.68	0.00	0.00	0.00	0.00	0.00	0.00	56.41	56.41	0.00	0.00	177.03	177.03	100.00
28/11/2016	93.42	0.00	0.00	0.00	0.00	0.00	0.00	63.20	63.20	0.00	0.00	0.00	0.00	0.00	0.00	57.56	57.56	0.00	0.00	0.00	0.00	0.00	0.00	56.29	56.29	0.00	0.00	177.06	177.06	100.00
29/11/2016	93.41	0.00	0.00	0.00	0.00	0.00	0.00	63.91	63.91	0.00	0.00	0.00	0.00	0.00	0.00	57.95	57.95	0.00	0.00	0.00	0.00	0.00	0.00	56.13	56.13	0.00	0.00	177.99	177.99	100.00
30/11/2016	92.82	0.02	0.02	22.32	22.35	0.00	0.00	36.41	36.41	0.02	0.02	1.54	1.58	0.02	0.02	56.61	56.65	0.00	0.00	0.00	0.00	0.03	0.03	54.71	54.76	0.09	0.09	171.58	171.75	99.90
<b>Total [ML]:</b>		<b>0.02</b>	<b>0.08</b>	<b>38.10</b>	<b>38.19</b>	<b>0.02</b>	<b>0.02</b>	<b>1984.42</b>	<b>1984.47</b>	<b>0.03</b>	<b>0.06</b>	<b>260.99</b>	<b>261.08</b>	<b>0.04</b>	<b>0.04</b>	<b>1411.30</b>	<b>1411.37</b>	<b>0.00</b>	<b>0.00</b>	<b>230.32</b>	<b>230.32</b>	<b>0.04</b>	<b>0.04</b>	<b>1419.27</b>	<b>1419.35</b>	<b>0.15</b>	<b>0.24</b>	<b>5344.39</b>	<b>5344.78</b>	

Water Volume [%]:  
 Untreated: 0.00 %  
 Below Dose: 0.00 %  
 To Dose: 99.99 %

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew